AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in this application:

1. (original): A method for determining the instant at which a nitrogen oxide storage catalyst is switched from the storage phase to the regeneration phase and for diagnosing the storage properties of this catalyst, the nitrogen oxide storage catalyst having a nitrogen oxide filling level and being arranged in the exhaust section of an internal combustion engine operated predominantly with a lean air/fuel ratio, and the filling level of the nitrogen oxide storage catalyst being determined continuously during the storage phase by integration of the nitrogen oxide mass stored per unit time at each instant, and the catalyst is switched over on the basis of the filling level which has been reached, wherein the filling level of the storage catalyst which remains after regeneration has been carried out is used as the starting value for determining the filling level during the next storage phase.

2. (original): The method as claimed in claim 1, wherein the filling level of the storage catalyst which still remains after regeneration has been carried out is determined using a previously determined dependent relationship between the filling level and the filling level at the start of regeneration, the duration of regeneration, the air/fuel ratio of the exhaust gas during the regeneration and the exhaust-gas temperature.

3. (original): The method as claimed in claim 2, wherein the nitrogen oxide mass stored per unit time at each instant is determined from the prevailing nitrogen oxide conversion rate and the nitrogen oxide mass flow in the exhaust gas upstream of the catalyst.

4. (original): The method as claimed in claim 3, wherein to determine the nitrogen oxide conversion rate the nitrogen oxide mass flow downstream of the catalyst is measured and the nitrogen oxide mass flow upstream of the catalyst is determined on the basis of a mathematical model or with the aid of a nitrogen oxide mass flow which has previously been determined empirically for the corresponding operating point.

5. (original): The method as claimed in claim 3, wherein the nitrogen oxide conversion rate for the instantaneous operating point of the engine is determined with the aid of a mathematical model or empirical data for a fully regenerated storage catalyst, and the nitrogen oxide filling level of the storage catalyst is determined from this conversion rate by integration over the operating states of the engine which have occurred since the last regeneration.

6. (original): The method as claimed in claim 5, wherein to determine the filling level the prevailing nitrogen oxide conversion rate is provided with a correction, the correction being determined from a previously determined dependent relationship between nitrogen oxide conversion rate and filling level after incomplete regeneration.

7. (currently amended): The method as claimed in claim 5 ~~or 6~~, wherein the nitrogen oxide mass flow downstream of the catalyst is additionally measured.

8. (original): The method as claimed in claim 7, wherein to diagnose the storage capacity of the nitrogen oxide storage catalyst the measured nitrogen oxide mass flow downstream of the catalyst is compared with a calculated nitrogen oxide mass flow, the calculated nitrogen oxide mass flow being determined from the nitrogen oxide conversion rate, calculated as described in claim 5, and the nitrogen oxide mass flow upstream of the catalyst.

9. (original): The method as claimed in claim 8, wherein, if the measured nitrogen oxide mass flow exceeds the calculated nitrogen oxide mass flow over a defined period of time and by a predetermined amount, it is concluded that the storage capacity of the catalyst has dropped and a sulfur regeneration of the catalyst is initiated.

10. (original): The method as claimed in claim 9, wherein after repeated sulfur regeneration without success the storage catalyst is replaced.